

EXHIBIT 37

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMMSCOPE, INC.
Petitioner

v.

TQ DELTA, LLC
Patent Owner

Case No. IPR2022-00352
Patent No. 8,462,835

PATENT OWNER'S PRELIMINARY RESPONSE

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EXHIBIT LIST

Exhibit #	Description
2001	Affidavit of Mailing of Summons, Second Amended Complaint, and Notice-Consent of Availability of Mag Judge in <i>TQ Delta, LLC v. Pace Americas, LLC, et al.</i> , Case No. 1:13-cv-01835-RGA (D. Del.) (filed February 21, 2014)
2002	2Wire's June 2, 2014 Answer, Affirmative Defenses, and Counterclaims to Second Amended Complaint for Patent Infringement in <i>TQ Delta, LLC v. Pace plc, et al.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2003	2015 Co-operation Agreement between ARRIS and Pace
2004	2015 Joint Defense, Common Interest, and Confidentiality Agreement between ARRIS and Pace
2005	October 21, 2015 ARRIS Press Release
2006	2015 10-K for ARRIS International Plc
2007	ARRIS GLOBAL LTD. overview - GOV.UK
2008	2Wire's February 17, 2016 Corporate Disclosure Statement in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2009	2Wire's May 19, 2017 Amended Corporate Disclosure Statement in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2010	Petitioner ARRIS Group, Inc.'s Updated Mandatory Notice in IPR2016-01160 (April 20, 2018)
2011	2Wire's May 3, 2019 Second Amended Corporate Disclosure Statement in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)

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2012	Petitioner ARRIS Group, Inc.'s Updated Mandatory Notice in IPR2016-01160 (August 29, 2019)
2013	February 14, 2022 Oral Order in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2014	April 2, 2019 Oral Order in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2015	February 20, 2014 Order on Motion for <i>Pro Hac Vice</i> for Brett Schuman in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2016	April 1, 2019 Order on Motion for <i>Pro Hac Vice</i> for Andrew Ong in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2017	October 22, 2021 Notice of Appearance of Brett Schuman in <i>TQ Delta, LLC v. CommScope Holding Co., et al.</i> , Case No. 2:21-cv-310 (E.D. Tex.)
2018	October 22, 2021 Notice of Appearance of Andrew Ong in <i>TQ Delta, LLC v. CommScope Holding Co., et al.</i> , Case No. 2:21-cv-310 (E.D. Tex.)
2019	Jim Shead LinkedIn Page
2020	October 27, 2020 Omnibus Declaration of Rajendra A Chiplunkar in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2021	January 13, 2020 Trial Transcript in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.) (Family 2)
2022	May 20, 2019 Trial Transcript in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.) (Family 3)
2023	CommScope's Invalidity Contentions (January 13, 2022)

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2024	Notice of Hearing in <i>TQ Delta, LLC v. CommScope Holding Co., et al.</i> , Case No. 2:21-cv-310 (E.D. Tex.)
2025	July 26, 2021 Memorandum Opinion in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.) (Family 6)
2026	March 28, 2022 Order Denying Defts' Opposed Motion to Transfer Venue to the District of Delaware in <i>TQ Delta, LLC v. CommScope Holding Co., et al.</i> , Case No. 2:21-cv-310 (E.D. Tex.)
2027	July 3, 2018 Memorandum Opinion in <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.) (Family 6)
2028	Docket Report for <i>TQ Delta, LLC v. CommScope Holding Company, Inc., et al.</i> , Case No. 2:21-cv-310-JRG (E.D. Tex.)
2029	Docket Report for <i>TQ Delta, LLC v. Nokia Corp., et al.</i> , Case No. 2:21-cv-309-JRG (E.D. Tex.)
2030	Complaint, <i>TQ Delta, LLC v. Nokia Corp., et al.</i> , Case No. 2:21-cv-309-JRG (E.D. Tex.)
2031	Docket Report for <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2032	Declaration of Peter J. McAndrews
2033	September 18, 2020 Jacobsen Deposition Transcript from <i>TQ Delta, LLC v. 2Wire, Inc.</i> , Case No. 1:13-cv-01835-RGA (D. Del.)
2034	October 30, 2019 Jacobsen Deposition Transcript from <i>TQ Delta, LLC v. Zyxel Communications, Inc., et al.</i> , Case No. 1:13-CV-2013-RGA (D. Del.)
2035	Motion to Stay in <i>TQ Delta, LLC v. CommScope Holding Co., et al.</i> , Case No. 2:21-cv-310 (E.D. Tex.)
2036	Declaration of Edward Chin

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Exhibit #	Description
2037	Declaration of Vijay K. Madiseti, Ph.D.

I. INTRODUCTION

Patent Owner TQ Delta, LLC submits this preliminary response to the Petition filed by CommScope, Inc. (“CommScope” or “Petitioner”) requesting *inter partes* review of claims 8–10, 15, 24–26, and 31 (the “Challenged Claims”) of U.S. Pat. No. 8,462,835 (the “835 Patent”).

The Board must deny institution of this proceeding under the one-year bar date of 35 U.S.C. § 315(b). 2Wire, Inc. (“2Wire”), a privy of CommScope and a real party in interest (“RPI”), was served with a complaint alleging infringement of the 835 Patent on February 7, 2014—almost eight years before the Petition was filed. That case has resulted in a summary judgment finding that 2Wire infringes the 835 Patent and the issue of validity will be tried to a jury beginning July 18, 2022. CommScope is the acquirer of the successor-in-interest of 2Wire. CommScope should not be allowed to circumvent the statutory bar of § 315(b), especially when CommScope has had the opportunity to control the on-going district court proceedings involving 2Wire and challenge the validity of the 835 Patent in those proceedings.

In addition, the Board should exercise its discretion under 35 U.S.C. § 314(a) to deny institution. Institution of a trial would be an inefficient use of Board resources in light of the state of the parallel district court litigations between Patent Owner and CommScope and between Patent Owner and 2Wire involving the 835

Patent.

The Petition fails to demonstrate a reasonable likelihood that the Challenged Claims of the 835 Patent are unpatentable. Each of the asserted prior art references differs significantly from the inventions claimed by the 835 Patent, and claim limitations are missing from each of the asserted prior art references. Moreover, regarding the obviousness grounds, Petitioner fails to provide evidence of any motivation for modifying and/or combining the references as it proposes or evidence of any reasonable expectation of success.

Therefore, the Board should decline instituting trial on each of the four proposed Grounds for several reasons.

Ground 1: The G.992.1 reference fails to teach or suggest at least the following limitations of the Challenged Claims: “transmit a flag signal,” “switch to using for transmission[/reception], a second FIP setting following transmission[/reception] of the flag signal,” or “wherein: . . . the switching occurs on a pre-defined forward error correction codeword boundary following the flag signal.”

Ground 2: The SC-060 reference fails to teach or suggest at least the following limitations of the Challenged Claims: “[a]n apparatus configurable to adapt forward error correction and interleaver parameter (FIP) settings,” “transmit a flag signal,” “switch to using for transmission[/ reception], a second FIP setting following transmission[/ reception] of the flag signal,” “a first forward error

correction parameter value of the first FIP setting is different than a second forward error correction parameter value of the second FIP setting,” wherein: . . . the switching occurs on a pre-defined forward error correction codeword boundary following the flag signal,” or “a first interleaver parameter value of the first FIP setting is different than a second interleaver parameter value of the second FIP setting.”

Moreover, Ground 2 should be rejected because it provides only bare conclusions regarding obviousness, without sufficient articulated reasoning. In particular, Petitioner fails to provide a reason to modify the SC-060, establish that modifying SC-060 would have had a reasonable expectation of success, or provide a *prima facie* showing that the “the switching occurs on a pre-defined forward error correction codeword boundary . . .” limitation would have been obvious.

Ground 3: Petitioner’s Ground 3 is likewise deficient. As discussed above, G.992.1 and SC-060 both fail to teach or suggest several of the same limitations of the Challenged Claims. Moreover, Ground 3 fails to demonstrate a reasonable expectation of success at arriving at the claimed inventions or *prima facie* obviousness of a combination that includes the “switching occurs on a pre-defined forward error correction boundary” limitation of the Challenged Claims.

Ground 4: Ground 4 also falls short. Wunsch is essentially identical to SC-060, and Petitioner’s arguments based on G.992.1 and Wunsch are essentially

identical to Petitioner's arguments based on G992.1 and SC-060. Therefore, Ground 4 fails for the same reasons Ground 3 does.

Accordingly, Petitioner has not carried its burden of showing that any of the Challenged Claims are likely unpatentable.

II. SUMMARY OF THE 835 PATENT

The 835 Patent describes a novel solution that improves DSL performance and reliability by adapting impulse noise protection to changing conditions while continuing to communicate data. Ex. 1001 at 1:20–25, 8:4–9:18, and Figures 1, 3, 4 and 6. The 835 Patent explains that, at the time of the inventions, “[i]t [was] standard practice for communications systems to use interleaving in combination with Forward Error Correction (FEC) to correct the errors caused by impulse noise.” *Id.* at 1:27–37. FEC and interleaving parameters include, *e.g.*, FEC codeword size, FEC input block length, number of added FEC redundancy bytes, and interleaver depth. *Id.* at 2:22–25. The 835 Patent refers to a set of FEC and Interleaving Parameter values as an “FIP setting.” *Id.* at 2:22–25; 3:28–34.

The 835 Patent discloses a system that switches from using one FIP setting to another FIP setting without going through the startup initialization procedure such as that of traditional DSL systems. *Id.* at 3:37–47. The receiver and transmitter synchronize the switch so that the transmitter and receiver start using the parameters at the same instant in time. *Id.* at 11:4–7. This synchronization can be based on, for

example, an FEC codeword count or, alternatively, a flag signal. *Id.* at 11:7-9. The Challenged Claims are directed to synchronization using a flag signal. The flag or marker signal is similar to that used in the ADSL2 G.992.3 OLR protocol. *Id.* at 12:4-5. The 835 Patent explains that a flag signal is more desirable than using an FEC codeword counter because, for example, it has greater impulse noise immunity. *Id.* at 12:5-8.

With reference to Figure 6, the 835 Patent describes the method of synchronization using a flag signal. *Id.* at 19:14-16. “[T]he modems enter Showtime using the first FIP parameters.” *Id.* at 19:17-19. “[A] message is exchanged indicating the new FIP settings.” *Id.* at 19:19-20. Next, “the transmitter forwards to the receiver a flag signal indicating when the new FIP settings are to be used.” *Id.* at 19:20-22. At a predefined change time, following the transmission of the flag signal, the transmitter switches to the new FIP settings and begins transmission using the new FIP parameters. *Id.* at 19:23-25. In particular, “[f]or synchronization using a flag signal, the receiver and transmitter would start using updated FEC and interleaving parameters on a pre-defined FEC codeword boundary following the sync flag.” *Id.* at 12:8-11.

III. CLAIM CONSTRUCTION

Each of the Challenged Claims recite a “flag signal.” U.S. District Court Judge, the Hon. Richard G. Andrews, construed “flag signal” as “signal used to

indicate when an updated FIP setting is to be used (the signal does not include the FEC codeword counter value upon which the updated FIP setting is to be used).” Pet. at 10. Petitioner applies this meaning of flag signal to the prior art. *Id.* While TQ Delta agrees with the positive portion of the construction, and agrees that the negative portion of the construction is accurate, the negative portion is incomplete for the reasons set forth below.

The 835 Patent discloses two means of synchronizing the switch to updated FIP settings: (1) synchronization based on an FEC codeword count that is transmitted in a message, or (2) synchronization based on a transmitted flag signal. Ex. 1001 at 11:7-9; Ex. 2037 at ¶25. In the message-based embodiment, the transmitting modem transmits to the receiving modem a message that includes data specifying the FEC codeword counter value on which the switch to updated FIP settings are to be used for transmission and reception. Ex. 1001 at 11:51-55. In the flag signal-based embodiment, the transmitting and receiving modems do not rely on communication of a codeword count value or any other data that specifies the timing event on which the switch is to occur. Ex. 2037 at ¶31. Instead, in the flag signal embodiment, only a flag signal is transmitted to indicate when an updated FIP setting is to be used. *Id.* The flag signal is a wideband signal, generated from a pseudorandom noise pattern that does not contain any data in and of itself “similar to that used in the ADSL2 G.992.3 OLR protocol.” Ex. 1001 at 12:3-5; Ex. 2037 at

¶32. Lacking any data content, the way in which a flag signal operates as an indicator (*i.e.*, “to indicate when an updated FIP setting is to be used”) is by inversion of the pseudorandom noise pattern used to generate of the signal. Ex. 2037 at ¶33. In this regard, the 835 Patent explains that “a flag signal could be an inverted sync symbol, or sync FLAG, as used in the ADSL2 G.992.3 OLR protocol.” Ex. 1001 at 12:29-31.

The 835 Patent recognizes that synchronization using a flag signal is “more desirable than using an FEC codeword counter because, for example, it has greater impulse noise immunity.” *Id.* at 12:6-7; Ex. 2037 at ¶36. Relying on a message containing an FEC codeword count is more likely to be negatively impacted by impulse noise because it requires accurate receipt and decoding of the data content of the message. Ex. 2037 at ¶36.

The negative portion of the Petitioner’s adopted construction is too broad and, therefore, inconsistent with the plain meaning of flag signal and the intrinsic record. This is so because the construction leaves open the possibility that a message would qualify as a flag signal as long as it does not contain data indicating an FEC codeword counter value when, instead based on the claim term and intrinsic record, it should not.

Notably, however, while the statement of the District Court’s construction in its claim construction order (the statement relied on by Petitioner) is too broad, the

record of the claim construction process shows that the District Court and the parties understood that “flag signal” had a narrower meaning. During the *Markman* hearing, TQ Delta consistently maintained that one of skill in the art would understand that a flag signal cannot include “information that tells you when the FIP settings are going to be used.” Ex. 1020 at 26:20-21. TQ Delta maintained, and the District Court agreed, that a flag signal does not include information indicating when the FIP settings are going to be used. *Id.* at 28:15-25 (“THE COURT: And so what you were trying to say by flag signal is essentially some kind of signal that is not dependent on its content to act as a signal? MR. McANDREWS: Not depending on its data content. I mean, because we’re all talking about a pattern of bits, so that the pattern of bits is what is readily identifiable as a sync flag. . . . THE COURT: I assumed in my mind it was like a smiley face, but maybe that’s wrong.”). The Petitioner (via its RPI and privy, 2Wire) similarly agreed that a flag signal does not include information indicating when the FIP settings are going to be used. *Id.* at 27:21-22 (“So an indicator like a stoplight, that’s an indication, putting up a flag, shooting a gun.”). Thus, TQ Delta and Petitioner agreed that a flag signal does not include information indicating when the FIP settings are going to be used. This agreement was reflected in the Memorandum Opinion in which the District Court explained the reasons why it reached its “flag signal” construction. Ex. 2027 at 5 (“The parties stated at oral argument that they agree that the specification provides two

embodiments, and that the claims read only on the ‘flag signal’ embodiment, and not the ‘message’ or ‘FEC codeword counter’ embodiment.”).

In view of the foregoing, the correct construction of flag signal is “signal used to indicate when an updated FIP setting is to be used, where the signal does not include information (*e.g.*, a FEC codeword counter value) specifying when the updated FIP setting is to be used.” Ex. 2037 at ¶37.

IV. NO REVIEW SHOULD BE INSTITUTED BECAUSE COMMScope IS TIME-BARRED UNDER 35 U.S.C. §315(b) AND LACKS STANDING

The burden is on CommScope to demonstrate that its petition is “not time-barred under § 315(b) based on a complaint served on a real party in interest or a privy more than a year before a petition is filed.” *RPX Corp. v. Applications in Internet Time, LLC*, IPR2015-01750, Paper 128 at 6-7 (P.T.A.B. Oct. 2, 2020) (precedential). Accordingly, CommScope bears the burden of establishing that no RPI or privy was served with a complaint alleging infringement of the 835 Patent more than one year prior to the filing of CommScope’s Petition. *See id.* CommScope cannot meet this burden because 2Wire, who was served with a such a complaint almost eight years before CommScope filed its Petition, is an RPI and privy of CommScope.

“Whether a party who is not a named participant in a given proceeding nonetheless constitutes a ‘real party-in-interest’ or ‘privy’ to that proceeding is a

highly fact-dependent question.” Consolidated Trial Practice Guide (“CTPG”) at 13. The “terms ‘real party in interest’ and ‘privy’ were included in § 315” to serve the purpose of “safeguard[ing] patent owners from having to defend their patents against belated administrative attacks by related parties via § 315(b).” *Applications in Internet Time, LLC v. RPX Corp.*, 897 F.3d 1336, 1350 (Fed. Cir. 2018). The “RPI and privity requirements were designed to avoid harassment and preclude parties from getting ‘two bites at the apple’ by allowing such parties to avoid . . . the time bar.” *RPX*, IPR2015-01750, Paper 128 at 9.

The RPI inquiry involves a “flexible approach that takes into account both equitable and practical considerations, with an eye toward determining whether the non-party is a clear beneficiary that has a preexisting, established relationship with the petitioner.” *Applications in Internet Time, LLC v. RPX Corp.*, 897 F.3d 1336, 1351 (Fed. Cir. 2018). The RPI inquiry has no “bright line test,” and is assessed “on a case-by-case basis.” CTPG at 17. The term RPI should “sweep[] broadly” and the determination of who is an RPI should consider “who, from a ‘practical and equitable’ standpoint will benefit from the redress that the chosen tribunal might provide.” *AIT*, 897 F.3d at 1346-49. “[T]wo questions lying at its heart are whether a non-party ‘desires review of the patent’ and whether a petition has been filed at a nonparty’s ‘behest.’” *Id.* at 1351.

Regarding the privity inquiry, the “Office intends to evaluate what parties

constitute ‘privies’ in a manner consistent with the flexible and equitable considerations established under federal caselaw.” CTPG at 14-15. “The notion of ‘privity’ is more expansive, encompassing parties that do not necessarily need to be identified in the petition as a ‘real-party-in-interest.” *Id.* Privity “prevent[s] successive challenges to a patent by those who previously have had the opportunity to make such challenges in prior litigation.” *WesternGeco LLC v. ION Geophysical Corp.*, 889 F.3d 1308, 1319 (Fed. Cir. 2018). In *Taylor v. Sturgell*, 553 U.S. 880, 893-95 (2008), the Supreme Court provided a non-exhaustive list for examining whether the legal relationship between two parties establishes that one is the privy of the other: (1) an agreement between the parties to be bound; (2) pre-existing substantive legal relationships between the parties; (3) adequate representation by the named party; (4) the non-party’s control of the prior litigation; (5) where the non-party acts as a proxy for the named party to relitigate the same issues; and (6) where special statutory schemes foreclose successive litigation by the non-party. *AIT*, 897 F.3d at 1360 (quoting *Taylor*, 553 U.S. at 894-95). “Analysis under any one of the [*Taylor*] factors can support a finding of privity.” *Ventex Co. v. Columbia Sportswear North America, Inc.*, IPR2017-00651, Paper 148 at 12 (P.T.A.B. Jan. 24, 2019) (precedential).

2Wire, a company on which Patent Owner served a complaint for infringement of the 835 Patent over eight years ago, is an RPI and privy of

CommScope. Accordingly, CommScope cannot meet **its burden** of establishing that no RPI or privy was served with a complaint alleging infringement more than one year prior to the filing of CommScope's Petition, and the Petition should be denied as time-barred under 35 U.S.C. § 315(b).

A. Factual Background

On February 7, 2014, Patent Owner served 2Wire and Pace Americas, LLC (formerly known as Pace Americas, Inc.), and on February 21, 2014, Patent Owner served Pace plc, with a Second Amended Complaint (Ex. 1034; Ex. 2001) in Civil Action No. 1:13-cv-01835-RGA (D. Del.) alleging infringement by 2Wire, Pace Americas, LLC, and Pace Plc of the 835 Patent (the "2Wire Lawsuit"). Therefore, at least since February 21, 2014, 2Wire, Pace Americas, LLC, and Pace Plc have been barred from challenging the validity of the claims of 835 Patent in an *inter partes* review under 35 U.S.C. § 315(b).¹ At the time of the filing of the Second Amended Complaint, 2Wire was a wholly-owned subsidiary of Pace plc. *See* Ex. 2002 at ¶4.

Subsequently, on April 22, 2015, ARRIS Group, Inc. and Pace plc entered into a Co-operation Agreement to implement a Scheme for the Acquisition and

¹ CommScope concedes as much. *See* Pet. at 65 ("2Wire's one-year period to petition for IPR of the '835 patent has run because Patent Owner filed a lawsuit on November 4, 2013 in the District of Delaware, which was amended on February 7, 2014 to name 2Wire as a defendant . . .").

Merger of Pace/2Wire and ARRIS Group, Inc. (Ex. 2003). On May 20, 2015, ARRIS Group, Inc. and Pace/2Wire entered into a Common Defense Agreement. (Ex. 2004). On October 21, 2015, “Arris’ stockholders approved the merger agreement implementing ARRIS’ pending acquisition of Pace and the related reorganization in a cash and stock transaction.” (*See* Ex. 2005).

On January 4, 2016, ARRIS Group, Inc. completed its combination with Pace plc whereby ARRIS International plc became the successor to ARRIS Group, Inc. and ARRIS International plc acquired Pace plc. (Ex. 2006 at p. i). Pace plc became a direct wholly-owned subsidiary of ARRIS International plc, and ARRIS Group, Inc. became an indirect wholly-owned subsidiary of ARRIS International plc. *Id.* at p. 87. Pace plc was then renamed ARRIS Global, Ltd. (Ex. 2007).

On February 17, 2016, 2Wire filed a corporate disclosure statement in the 2Wire Lawsuit stating that its “parent company is Pace Americas Investments LLC, whose own parent is Pace Americas Holdings, Inc., whose parent is Pace Ltd., whose own parent is ARRIS International plc. ARRIS International plc is publicly traded on the NASDAQ Stock Market.” (Ex. 2008). On May 19, 2017, 2Wire filed an amended corporate disclosure statement stating that “2Wire, Inc. has been merged to form ARRIS Solutions, Inc. This name change is the result of a merger between 2Wire, Inc., Aurora Networks, Inc., and ARRIS Solutions, Inc. that became effective January 1, 2017. . . . ARRIS Solutions, Inc.’s parent company is ARRIS Group,

Inc.” (Ex. 2009).

On April 20, 2018, in IPR2016-01160, which is directed to another patent owned by Patent Owner, ARRIS Group, Inc. filed a mandatory notice stating that “ARRIS Group, Inc. supplements its mandatory notices by further identifying Ruckus Wireless, Inc. as a real party in interest. Ruckus Wireless, Inc. became a real party in interest due to a merger effective March 31, 2018.” (Ex. 2010).

Subsequently, on May 3, 2019, 2Wire filed a second amended corporate disclosure in the 2Wire Lawsuit stating that “On January 1, 2017, 2Wire, Inc., merged to form ARRIS Solutions, Inc. as a result of a merger between 2Wire, Inc., Aurora Networks, Inc., and ARRIS Solutions, Inc. . . . The parent company of ARRIS Solutions is Ruckus Wireless Inc.; the parent company of Ruckus Wireless Inc. is ARRIS US Holdings, Inc.; and the parent company of ARRIS US Holdings is ARRIS International Limited (UK), formerly known as ARRIS International PLC. On April 4, 2019, CommScope Holding Company, Inc., acquired ARRIS International Limited (UK), becoming the parent entity of ARRIS International Limited (UK).” (Ex. 2011).

On August 29, 2019, ARRIS Group, Inc. filed updated Mandatory Notices in IPR2016-01160, stating that “ARRIS Group, Inc. supplements its mandatory notices by further identifying CommScope Holding Company, Inc. and the following corporate entities of CommScope Holding Company, Inc. that became real parties

in interest due to the recent merger/acquisition of Ruckus Wireless, Inc. (successor-in-interest to ARRIS Group, Inc.) on or about April 4, 2019 Accordingly, Ruckus Wireless, Inc. is a successor-in-interest to ARRIS Group, Inc. and is wholly owned by CommScope Technologies LLC (Delaware), who is wholly owned by CommScope, Inc of North Carolina, who is wholly owned by CommScope, Inc. (Delaware), who is wholly owned by CommScope Holding Company, Inc. (Delaware).” (Ex. 2012).

Thus, as of no later than April 4, 2019, the successor-in-interest of 2Wire was ARRIS Solutions, Inc., whose parent company was ARRIS Group, Inc., whose successor in interest is Ruckus Wireless, Inc., who is wholly owned by CommScope Technologies LLC, who is wholly owned by CommScope, Inc. of North Carolina, who is wholly owned by CommScope, Inc., who is wholly owned by CommScope Holding Company, Inc. Accordingly, 2Wire (which was merged into ARRIS Solutions, Inc.) is owned by Petitioner CommScope, Inc. and its parent, CommScope Holding Company, Inc.²

On August 13, 2021, TQ Delta sued ARRIS International Limited (UK),

² Petitioner confirms as much. *See* Ex. 1033 at 1 (“On April 4, 2019, CommScope Holding Company, Inc., CommScope’s parent entity, acquired ARRIS International Limited (UK) . . . becoming its parent company. Prior to CommScope’s acquisition of ARRIS International, ARRIS International acquired an entity named 2Wire, Inc.”).

ARRIS Global Ltd., ARRIS US Holdings, Inc., ARRIS Solutions, Inc., ARRIS Technology, Inc., ARRIS Enterprises, LLC (collectively, the “ARRIS Entities”), CommScope Holding Company, Inc., and CommScope Inc. for infringement of at least claim 24 of the 835 Patent in Civil Action No. 2:21-cv-00310 (E.D. Tex.) (the “Texas Litigation”). *See* Ex. 1028 at ¶104.³

The Petition here was filed on December 31, 2021 and identified only CommScope, Inc. and CommScope Holding Company, Inc. as RPIs. Pet. at 64. The Petition was filed almost eight years after TQ Delta sued 2Wire and Pace plc for infringement of the 835 Patent and, yet, the Petitioner did not identify their co-defendant, ARRIS Solutions, Inc. (2Wire’s successor), or ARRIS Global Ltd. (f/k/a Pace plc) as RPIs. It also failed to identify any of the other ARRIS Entities as RPIs.

The 2Wire Lawsuit is ongoing, and 2Wire is currently the sole defendant.⁴ The Court granted summary judgment of infringement of claims 8 and 10 of the 835 Patent against 2Wire on June 28, 2021, (*see* Ex. 1036), and the issue of validity of the 835 Patent is to be determined at trial, which is currently scheduled for July 18, 2022. *See* Ex. 2013. A trial on damages is to follow the trial on invalidity. *See* Ex.

³ On September 24, 2022, TQ Delta voluntarily dismissed its claims against ARRIS International Limited and ARRIS Global Ltd. in the CommScope Litigation without prejudice. *See* Ex. 2036 at ¶8.

⁴ TQ Delta’s October 13, 2017 Third Amended Complaint in the 2Wire Lawsuit identified 2Wire as the sole defendant. *See* Ex. 1035 at ¶2.

2014.⁵

B. CommScope's Petition is Barred Under 35 U.S.C. § 315(b) Because 2Wire is an RPI and a Privy

1. 2Wire and the ARRIS Entities Are RPIs (and Should Have Been Identified As Such in the Petition)

Pursuant to 35 U.S.C. § 312(a)(2), a petition for IPR “may be considered only if . . . the petition identifies all [RPIs].” Identification of all RPIs “enables the Board to determine whether inter partes review may be barred under [Section] 315.” *Medtronic, Inc. v. Robert Bosch Healthcare Systems, Inc.*, IPR2014-00488, Paper 52 at 6 (P.T.A.B. 2015). “[W]hen a patent owner provides sufficient rebuttal evidence that reasonably brings into question the accuracy of the petitioner’s identification, the ultimate burden of proof remains with the petitioner to establish that it has complied with the statutory requirement . . . to identify all [RPIs].” *Id.* at 6-7. As discussed herein, 2Wire and the ARRIS Entities are RPIs, and CommScope failed to comply with Section 312(a)(2) by not identifying them as such. Moreover, because 2Wire (now ARRIS Solutions, Inc.) and Pace plc (now ARRIS Global, Ltd.) are RPIs, the Petition is time-barred.

2Wire and the ARRIS Entities are “clear beneficiar[ies]” of the Petition and “ha[ve] a preexisting, established relationship with [CommScope].” *AIT*, 897 F.3d

⁵ The Court bifurcated the 2Wire Lawsuit for purposes of trial by patent families. Claim construction and expert discovery for the 835 Patent is complete, and dispositive motions have been resolved. Ex. 2032 at ¶¶6-8.

at 1351. TQ Delta sued 2Wire for infringement of the 835 Patent almost eight years ago, and, while the case is still pending, the Court has found on summary judgment that 2Wire infringes claims 8 and 10 of the 835 Patent. And, TQ Delta has asserted that the ARRIS Entities infringe claims 8, 10, 24, and 26 of the 835 Patent in the Texas Litigation. *See* Ex. 1032 at 2. Moreover, 2Wire and the ARRIS Entities have had a preexisting, established relationship with CommScope as wholly owned subsidiaries since at least April 2019 – prior to the filing of the Petition and while the 2Wire Lawsuit has been pending. Also, as discussed above, ARRIS Group, Inc. identified CommScope Holding Company, Inc. as an RPI in IPR2016-01160. *See* Ex. 2012. Accordingly, 2Wire and the ARRIS Entities would benefit from the Board finding that the Challenged Claims (which include claims 8, 10, 24, and 26) are unpatentable and, therefore, unquestionably desire institution of the Petition filed by their corporate parent. *See* CTPG at 14 (“[A]t a general level, the [RPI] is the party that desires review of the patent”). CommScope acknowledges that it “is of course aware that a favorable outcome in this proceeding could benefit ARRIS International and 2Wire.” *See* Ex. 1033 at 4.

These facts establish 2Wire and the ARRIS Entities as RPIs. *See AIT*, 897 F.3d at 1349 (“[W]hen it comes to evaluating the relationship between a party bringing a suit and a non-party, the common law seeks to ascertain who, from a ‘practical and equitable’ standpoint, will benefit from the redress that the chosen

tribunal might provide.”); *Power Integrations, Inc. v. Semiconductor Components Indus., LLC*, 926 F.3d 1306, 1310, 1318 (Fed. Cir. 2019) (finding that non-party “Fairchild became an RPI at least by the time its merger with [petitioner] closed – four days before institution” and holding that “this IPR was time-barred . . . because Fairchild was an RPI at the time the IPR was instituted”); *Agilent Techs., Inc. v. Waters Techs. Corp.*, IPR2019-01131, Paper 12 at 7-8, 14 (P.T.A.B. Dec. 3, 2019) (finding that non-party Prozyme was an RPI, noting that “[t]his case . . . involves a parent company (Agilent) acting on behalf of a wholly owned subsidiary (Prozyme) that is barred from filing a petition in its own right” and finding that “Prozyme . . . is a beneficiary of Agilent’s filing of the Petition, directed to the very same claims previously challenged in district court” and that they “have a mutual interest in the continuing commercial and financial success of each other and both are incentivized to challenge the ‘234 patent claims”); *Ventex*, IPR2017-00651, Paper 148 at 10 (“Seirus would . . . receive . . . the direct benefit of a finding of unpatentability of claims of the ‘119 and ‘270 patents for which Columbia had accused Seirus of infringing. Furthermore, it is clear that Ventex and Seirus had a specially structured, preexisting, and well established business relationship with one another [T]hose are the type that . . . give rise to a determination that Seirus should have been named a real party in interest.”); *Cisco Sys., Inc. v. Hewlett Packard Enterprise*, IPR2017-01933, Paper 9 at 10 (P.T.A.B. Mar. 16, 2018) (“As of September 22, 2017,

Springpath is a wholly-owned subsidiary of Petitioner **and** a real-party in-interest in this review as of that date.”) (emphasis added); *Semiconductor Components Industries, LLC v. Power Integrations, Inc.*, IPR2016-00995, Paper 26 at 9-10 (P.T.A.B. Oct. 18, 2017) (finding that a completed merger creating a wholly owned subsidiary made the subsidiary an RPI as of the date of the merger).

In arguing that 2Wire and the ARRIS Entities are not RPIs, CommScope states that “[a]lthough 2Wire and the ARRIS entities now owned by CommScope Holding Company could benefit from the Board’s invalidation of the Challenged Claims, this is not the applicable test,” and cites *Jiawei Tech. (HK) Ltd. v. Simon Nicholas Richmond*, IPR2014-00935 (P.T.A.B. Aug. 21, 2015) for the proposition that “neither corporate control nor mutual interest in invalidity alone are sufficient to deem a non-party a real party in interest.” Pet. at 68. However, in *Jiawei*, the Board made that statement in the context of observing that “no evidence before us indicates that [non-party] Southwire is accused of infringing Patent Owner’s patent.” *Jiawei*, IPR2014-00935, Paper 52 at 6. Here, non-party 2Wire and the ARRIS Entities have been accused of infringing the 835 Patent and, therefore, have a very specific interest in, and would benefit from, the Challenged Claims being found unpatentable.

CommScope further argues that “2Wire and the ARRIS entities have not controlled, funded, or otherwise directed this petition,” that “2Wire and the ARRIS

entities do not exert control over CommScope,” and that “Petitioner has not coordinated its strategy regarding the filing of this IPR with the ARRIS entities or 2Wire.” Pet. at 68. Factors like control and funding, however, are not dispositive of the RPI issue. *See Cisco*, IPR2017-01933, Paper 9 at 16 (“[A] non-party may be a RPI even in the absence of control or an opportunity to control.”); *RPX*, IPR2015-01750, Paper 128 at 33 (“Even if Salesforce did not directly fund, control, or expressly request these IPR proceedings, the evidence regarding RPX’s relationship with Salesforce indicates that RPX represented Salesforce’s interests to Salesforce’s benefit and, consequently, that RPX effectively acted as if Salesforce had requested action by RPX, when filing the IPR petitions.”); *Agilent*, IPR2019-01131, Paper 12 at 11 (“The issues of control and funding . . . carry less weight in view of the compelling evidence of the intertwined nature of the relationship and the degree to which ProZyme stands to benefit from Agilent’s filing of the Petition”).

More importantly, however, CommScope’s assertions regarding control and direction are self-serving and difficult to believe given that the same outside and in-house attorneys have at all relevant times directed the present IPRs and all litigation against 2Wire and the ARRIS Entities relating to the 835 Patent:

- Attorneys Brett Schuman (lead litigation counsel) and Andrew Ong of Goodwin Procter represent 2Wire in the 2Wire Lawsuit, CommScope and the ARRIS Entities in the Texas Litigation, and CommScope here (*see* Pet. at 71-72; Ex. 2015;

Ex. 2016; Ex. 2017; Ex. 2018; Ex. 2021; Ex. 2022); and

- A declaration and a power of attorney signed by Jim Shead, Lead Counsel for CommScope, Inc., were submitted with the Petition, and Mr. Shead was “Senior Counsel – Litigation ” for Pace and ARRIS from 2015 to the time ARRIS was acquired by CommScope and, thus, was involved in the 2Wire Lawsuit.⁶ (*See* Ex. 1033; Ex. 2019).

The present Petition and 2Wire Lawsuit also show a single, unified direction and strategy:

- CommScope is using the same expert in this proceeding (Krista Jacobsen) as 2Wire used in the 2Wire Lawsuit (*see* Ex. 1003; Ex. 2020 at Exhibit A); and

- The two primary references CommScope relies on in the Petition (G.992.1 ITU-T and SC-060 ITU-T SGS15/Q4) are being relied upon by 2Wire in its invalidity case in the 2Wire Lawsuit (*see* Pet. at 3; Ex. 2025 at 6-10), and the Petition relies on the same prior art and substantially the same invalidity arguments that CommScope and the ARRIS Entities rely on in the Texas Litigation. *See* Ex. 2023 (Invalidity Contentions) at 86-87 and Exhs. L-7-L-12.

Therefore, there has been substantial coordination and common direction

⁶ Indeed, Mr. Shead attended trials on TQ Delta’s Family 2 and Family 3 patents as 2Wire’s “corporate representative” and “legal counsel.” Ex. 2021 at 124; Ex. 2022 at 110.

between and among 2Wire, the ARRIS Entities, and CommScope with respect to both the Petition and the 2Wire Lawsuit, and CommScope has benefited from work already paid for by 2Wire in the 2Wire Lawsuit. *See Medtronic*, IPR2014-00488, Paper 52 at 16 (“It also is relevant that Medtronic’s Petitions in the instant proceedings rely on similar prior art references and arguments as Cardiocom’s petitions in the earlier proceedings, and that portions of Dr. Stone’s testimony in the instant proceedings are identical to his testimony in the earlier proceedings. At some level, therefore, Medtronic’s Petitions enjoyed the benefit of work done previously, and paid for, by Cardiocom.”); *Johnson Health Tech Co. v. Icon Health & Fitness, Inc.*, IPR2014-01242, Paper 16 at 9 (P.T.A.B. Feb. 11, 2015) (“JHT’s control over JHTNA is further evidenced by the fact that the same attorneys representing JHTNA in the Utah Action also represented JHT in the reexam and currently represent both JHT and JHTNA in this inter partes review.”); *Radware, Inc. v. F5 Networks, Inc.*, IPR2017-01249, Paper 10 at 12-13 (P.T.A.B. Oct. 23, 2017) (“The significant overlap in corporate leadership between Petitioner and Radware, Ltd. also is indicative of corporate blurring. . . . Radware, Ltd.’s Vice President and General Counsel, Gadi Meroz, also serves as in-house counsel for Petitioner, and Mr. Meroz signed the Power of Attorney for the Petition before us.”).

Accordingly, CommScope’s Petition should have identified 2Wire and the ARRIS Entities as RPIs, and the Petition is time barred because 2Wire is an RPI.

2. 2Wire is also a Privy of the Petitioner

2Wire is a privy. The “more expansive” notion of privity “encompass[es] parties that do not necessarily need to be identified in the petition as a ‘real-party-in-interest.’” CTPG at 14. While each *Taylor* factor “alone is sufficient to establish privity between a nonparty and a named party in the prior litigation,” *PayPal, Inc. v. PersonalWeb Techs., LLC*, IPR2019-01111, Paper 27 at 12 (P.T.A.B. Nov. 22, 2019), at least five of the factors support a finding of privity here.

There was a preexisting substantive legal relationship between 2Wire and CommScope (*Taylor* Factor No. 2). 2Wire became a wholly owned subsidiary of CommScope in April of 2019, and, therefore, 2Wire and CommScope had a preexisting, substantive legal relationship well prior to the filing of the Petition and while the 2Wire Lawsuit has been ongoing. *See Copperweld Corp. v. Independence Tube Corp.*, 467 U.S. 752, 771-72 (1984) (“[I]n reality a parent and a wholly owned subsidiary *always* have a ‘unity of purpose or a common design.’ They share a common purpose whether or not the parent keeps a tight rein over the subsidiary . . .”). Moreover, as TQ Delta has sued both 2Wire and CommScope for infringing the 835 Patent, 2Wire and CommScope have a mutual interest in seeing the Challenged Claims found unpatentable. *See PayPal*, IPR2019-01111, Paper 27 at 30 (“Petitioner Entities challenge the same claims . . . as Patent Owner sued [non-party] Amazon for . . . and as Patent Owner sued Amazon’s customers (including

several Petitioner Entities) for Therefore, the evidence of record shows a sufficiently close relationship between Amazon and several Petitioner Entities, as it relates to the prior lawsuits.”). Further evidence of the relationship between 2Wire and CommScope is the fact that the Challenged Claims include the claims asserted in the 2Wire Lawsuit and that 2Wire and CommScope share the same counsel and expert.

Regarding *Taylor* Factor No. 3 (adequate representation by the named party), CommScope's interests have been adequately represented in the 2Wire Lawsuit. Indeed, 2Wire's interest in the 2Wire Lawsuit (*i.e.*, invalidating the 835 Patent) coincides with CommScope's interest in this proceeding. Also, CommScope acquired 2Wire while the 2Wire Lawsuit was ongoing, so CommScope has had the opportunity to be involved in that suit for the past several years (and will be able to be involved in the upcoming trial on the issue of invalidity and any subsequent trial on damages). Further, CommScope must believe its interests have been adequately represented in the 2Wire Lawsuit because it has used 2Wire's counsel (both in-house and outside) from the 2Wire Lawsuit to file its Petition and is using the technical expert that 2Wire used in the 2Wire Lawsuit as its expert here.

Taylor Factor No. 4 (where the non-party had control of the prior litigation) likewise supports a finding of privity. CommScope acquired 2Wire in April 2019, and, thus, since at least then, has controlled, or has had the opportunity or legal right

to control, the 2Wire Lawsuit, which is still ongoing. In fact, CommScope can be directly involved in the invalidity case 2Wire will make at trial less than two months from now. Accordingly, CommScope has had control of the 2Wire Lawsuit.⁷ See *Semiconductor Components Indus., LLC v. In-Depth Test LLC*, IPR2016-01833, Paper 17 at 11-12 (P.T.A.B. Mar. 24, 2017) (“There is no question that [Petitioner] ON Semiconductor will have a full and fair opportunity to litigate the validity of the challenged claims, given that the district case is ongoing and OSC now owns both ON Semiconductor and [time barred non-party] Fairchild . . . [which] weighs in favor of finding privity with Fairchild.”).

CommScope argues that “while the privity analysis may often turn on whether the non-party ‘had sufficient control over the district court litigation to justify treating [the nonparty] as a virtual party to that proceeding,’ . . . this ‘control’ analysis has universally been applied in cases where considerations of fairness and equity were already tipped in favor of binding the non-party.” Pet. at 69. The case

⁷ A finding of privity under *Taylor* Factor No. 4 does not require that the parties were in privity at the time the complaint was served on 2Wire. See *ARRIS Int’l PLC v. Chanbond, LLC*, IPR2018-00570, Paper 21 at 10 (PTAB Jul. 20, 2018) (“This approach of focusing the privity inquiry on the relationship during the prior lawsuit, rather than at the time of service of the complaint . . . is consistent with Taylor.”); *VMWare, Inc. v. Good Technology Software, Inc.*, Case IPR2015-00027, Paper 11 at 4 (PTAB Feb. 20, 2015) (refusing to “conclude that privity under § 315(b) is determined only at the time of service of a complaint alleging infringement of the challenged patent”).

on which CommScope relies in support this argument, *Minnesota Min. & Mfg. Co. v. Eco Chem, Inc.*, 757 F.2d 1256, 1264 (Fed. Cir. 1985), did not even discuss the issue of privity, but, regardless, as discussed above, “considerations of fairness and equity” – not least CommScope’s ownership of 2Wire, its ability to control the 2Wire Lawsuit, and its use of 2Wire’s counsel and expert in the Petition – *do* “tip in favor” of finding privity.

Taylor Factor No. 5 (where the non-party acts as a proxy for the named party to relitigate the same issues) weighs in favor of privity. While CommScope has been sued for infringement of the 835 Patent, 2Wire, CommScope’s subsidiary who has been found to infringe the 835 Patent and is barred from bringing its own IPR petition, will most directly and immediately benefit if the Board finds the Challenged Claims unpatentable. Therefore, CommScope is acting as a proxy for 2Wire by filing the Petition. *See PayPal*, IPR2019-01111, Paper 27 at 35 (“Petitioner Entities, then, are representing Amazon’s continued interests, as well as their own, in the instant IPR proceeding We, thus, conclude that Petitioner Entities are serving as proxies of Amazon.”).

Lastly, *Taylor* Factor No. 6 (where a special statutory scheme forecloses successive litigation by the non-party) supports a finding of privity. Section 315 includes the terms “real party in interest” and “privity” in order to “safeguard patent owners from having to defend their patents against belated administrative attacks by

related parties via § 315(b)” *AIT*, 897 F.3d at 1350, and “to avoid harassment and preclude parties from getting ‘two bites at the apple’ by allowing such parties to avoid . . . the time bar.” *RPX*, IPR2015-01750, Paper 128 at 9. Thus, Section 315 was designed to foreclose exactly the kind of thing that is going on here – TQ Delta having to defend against a belated administrative attack on its 835 Patent by 2Wire via 2Wire’s corporate parent. *Medtronic*, IPR2014-00488, Paper 52 at 18 (“Permitting Medtronic to circumvent the one-year time bar incurred by its acquired, now time-barred subsidiary would amount to a ‘second bite at the apple’ for Cardiocom.”); *Microsoft Corp. v. Science Applications Int’l Corp.*, IPR2019-01311, Paper 35 at 11-12 (P.T.A.B. Jan. 27, 2020) (“A special statutory scheme applies here under 35 U.S.C. 315(b), which bars institution of an IPR if a ‘privity of the petitioner is served with a complaint alleging infringement of the patent’ more than one year before the petition was filed.”).

CommScope states that “Patent Owner may attempt to argue that ownership over a subsidiary is sufficient to establish privity, but this argument was wrong as a matter of law then and is still wrong now. As the P.T.A.B. and the Federal Circuit have repeatedly noted, ‘the corporate form is not readily brushed aside,’ and separate corporate entities shall not be considered in privity with one another simply based upon a parent owning a controlling share of its subsidiary.” Pet. at 68-69. CommScope and 2Wire, however, have a “preexisting substantive legal

relationship” not only because of their parent/subsidiary relationship, but also because they have a shared interest in seeing the same claims of the 835 Patent found unpatentable, CommScope has had for over three years the opportunity to control the 2Wire Lawsuit, and they are using the same counsel (in-house and outside) and expert in the 2Wire Lawsuit and this proceeding. Any corporate distinction between the two has been erased with respect to their common goal of invalidating the 835 Patent.

CommScope also argues that because “Patent Owner asserted the very same patent in the separate Texas litigation against CommScope . . . [t]his indicates that Patent Owner itself does not believe that CommScope is in privity with 2Wire” and that “fairness and equity weigh heavily against the application of privity to bar CommScope from fully defending against Patent Owner’s new—and first—lawsuit against it.” Pet. at 70. That TQ Delta asserted the 835 Patent against CommScope does not mean TQ Delta does not believe 2Wire is CommScope’s privity. Rather, the 2Wire Lawsuit involves only a subset of infringing products (which originated from 2Wire/Pace) and yearly unit sales thereof for which CommScope and its subsidiaries are responsible. CommScope’s and its subsidiaries’ additional infringing products and unit sales are at issue in the Texas litigation. Moreover, the privity inquiry is indifferent to the fact TQ Delta has separately sued CommScope and CommScope is representing its own interests in addition to those of the time-barred party

2Wire/ARRIS Solutions, Inc. *See PayPal*, IPR2019-01111, Paper 27 at 26 (“[I]n drafting 315(b), Congress chose language that bars petitions where proxies or privies would benefit from an instituted IPR, even where the petitioning party might separately have its own interest in initiating an IPR. . . . Thus, [the petitioners] representing their own interests in addition to those of [time barred non-party] Amazon’s does not negate a finding of privity.”).

Regarding both the RPI and privity inquiries, CommScope states that it would not be fair to subject CommScope to the one year bar because “CommScope Holding Company acquired the ARRIS entities well after 2Wire’s time-bar period lapsed and was not, and could not have been, involved in 2Wire’s decision not to file an IPR on the ’835 patent.” Pet. at 69. However, “the focus of the real-party-in-interest inquiry is on the patentability of the claims challenged in the IPR petition, bearing in mind who will benefit from having those claims canceled or invalidated,” *AIT*, 897 F.3d 1348, not on whether the Petitioner had any say in a non-party RPI’s or privy’s decision not to file an IPR petition. With respect to privity, whether or not a petitioner was involved with a non-party’s decision to not file an IPR petition is not a *Taylor* factor.

Accordingly, because 2Wire is a privy, the Petition is barred under Section 315(b).

V. THE BOARD SHOULD DENY INSTITUTION UNDER *FINTIV*

The Board should exercise its discretion to deny institution under 35 U.S.C. § 314(a) in light of the parallel, co-pending 2Wire Lawsuit and Texas Litigation, which both will determine the issue of validity for the Challenged Claims at least six months before a final written decision in this proceeding. *Apple Inc. v. Fintiv Inc.*, IPR2020-00019, Paper 11 (P.T.A.B., March 20, 2020) (precedential). *Fintiv* sets forth six non-exclusive factors for determining “whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* at 6. Here, the *Fintiv* factors favor denial.

Regarding Factor 1, CommScope filed a motion on May 24, 2022 to stay the Texas Litigation with respect to patents (including the 835 Patent) asserted against 2Wire in Delaware. Commscope has agreed, to the extent the requested stay is granted, that it will be bound by any validity determination for the 835 Patent to be made in the jury trial set for July 18, 2022 in the 2Wire Lawsuit.⁸ Ex. 2035 at 9. Furthermore, the Texas Litigation has not yet been stayed and trial is scheduled to start on January 2, 2023 in the Texas Litigation. Whether or not a stay in the Texas Litigation is granted, the issue of the 835 Patent’s validity will be determined by at

⁸ CommScope improperly fails to address the 2Wire Lawsuit in its *Fintiv* analysis. *See Fintiv*, Paper 11 at 14 (“An unrelated petitioner should, therefore, address any other district court . . . proceedings involving the challenged patent to discuss why addressing the same or substantially the same issues would not be duplicative of the prior case even if the petition is brought by a different party.”).

least one district court (in a manner that is binding on both 2Wire and CommScope) long before completion of this IPR, if instituted. Thus, Factor 1 favors denial. *See Mylan Labs. Ltd. v Janssen Pharm. NV*, IPR2020-00440, Paper 17 at 13-14 (P.T.A.B. Sep. 16, 2020).

Regarding Factor No. 2, in the 2Wire Lawsuit, the court has already found on summary judgment that 2Wire infringes the 835 Patent, and trial is scheduled to take place on July 18, 2022 on the issue of validity of the 835 Patent. In the Texas Litigation, the district court entered a jointly proposed docket control order that schedules a jury trial for January 2, 2023, a date that “cannot be changed without showing good cause.” Ex. 1029 at pp. 1, 5. In this proceeding, the Board has until August 25, 2022 to decide on institution, and, if the Board does institute, the Board would have until August 25, 2023 to issue a final determination. Therefore, two trials addressing the validity of the 835 Patent are scheduled – one more than 13 months, and one more than seven months, before the expected deadline for a final written decision (if trial is instituted).

CommScope points to “time to trial” statistics for patent cases in the Eastern District of Texas and the effects of COVID-19 as reasons to believe that trial will occur later than January 2023 (Pet. at 61-62), but, as of the date of this filing, trial is still scheduled for January 2023, and the case schedule is proceeding as planned. For example, the claim construction briefing is complete and the claim construction

hearing will be held one week from now on June 1, 2022. (Ex. 2024). There is no reason to believe that trial will not occur before a final determination would be made in this proceeding.⁹ Thus, Factor 2 strongly favors denial. *See Global Tel*Link Corp. v. HLFIP Holding, Inc.*, IPR2021-00444, Paper 14 at 19-20 (P.T.A.B. July 22, 2021) (“[N]either party has informed us that jury trials actually have been suspended that would affect the parallel proceeding at issue. On these facts, we do not find that COVID-19 pandemic injects substantial uncertainty into the October 12, 2021 scheduled trial date.”); *Google LLC v. Ecofactor, Inc.*, IPR2021-00488, Paper 12 at *12 (P.T.A.B. Aug. 11, 2021) (“Because the trial in the District Court proceeding is scheduled more than six months before the due date for the Final Written Decision, even if there are some delays, the District Court proceeding is likely to result in a trial verdict in advance of our statutory due date. Accordingly, this factor weighs in favor of exercising our discretion to deny.”); *Samsung Elec. Co. v. Clear Imaging Research, LLC*, IPR2020-01551, Paper 12 at 13-14 (P.T.A.B. Feb. 17, 2021) (that parallel trial was scheduled to begin more than ten months before deadline for final written decision “weighs strongly in favor of exercising discretion to deny” “even accounting for the possibility of a Covid-19 related delay”).

⁹ CommScope argued that it filed a motion to transfer the case and that, if that motion is granted, the trial date in the Texas Litigation will be mooted. Pet. at 62. The District Court, however, denied the motion to transfer on March 28, 2022. (Ex. 2026).

With respect to Factor No. 3, the district court and parties have already invested heavily in the 2Wire Lawsuit with respect to the 835 Patent. The parties long ago completed fact and expert discovery, the Court has construed the claims and ruled on dispositive motions, and trial on the issue of validity is scheduled for July 18, 2022, very likely before a decision on institution is to be made. Ex. 2032 at ¶¶6-8. This favors denial. *See Mylan*, IPR2020-00440, Paper 17 at 19 (“there is a near certainty that trial will be completed in the Teva litigation imminently, so that the district court will have invested significant resources in assessing the validity of the challenged patent well before the Board would issue a Final Written Decision should we institute”).

With respect to the Texas Litigation, the district court consolidated TQ Delta's case against the CommScope defendants with another case TQ Delta brought against Nokia at the same time it filed its complaint against CommScope. *See* Ex. 2036 at ¶11. The consolidated Texas Litigation involves 22 patents and is already far along. *See id.* at ¶¶5-51. The parties have exchanged infringement and invalidity contentions, fully briefed their claim construction positions, and have completed substantial document production. *Id.* at ¶¶12, 22, 42, 46-49. In that regard, TQ Delta has produced over 382,000 pages, CommScope has produced over 17,500 pages, and Nokia has produced over 280,000 pages. *Id.* at ¶51. Moreover, two depositions have been taken, and the parties have served and responded to interrogatories and

requests for admission. *See id.* The district court has ruled on a motion to transfer and several other fully briefed motions are pending with the Court. *See id.* at ¶¶10-50. The Court has also entered an order focusing the patent claims and prior art and appointed a Technical Advisor to the case. *See id.* at ¶¶43-44. Moreover, the *Markman* hearing, the close of fact discovery, and service of opening expert reports are all scheduled to occur before the deadline for a decision on institution. *See id.* at ¶52.

This substantial investment in the Texas Litigation and 2Wire Lawsuit overshadows the fact that the Petition was filed four and a half months after CommScope was served. Thus, Factor No. 3 favors denial. *See 10X Genomics, Inc. v. President and Fellows of Harvard College*, IPR2020-01467, Paper 21 at 13 (P.T.A.B. Feb. 22, 2021) (“We also determine the Petition was filed timely Nonetheless, at this late stage in the district court proceeding the investment made by the court and both parties is significant, we find this factor weighs heavily in favor of exercising our discretion to deny institution.”).

As for Factor No. 4, there is substantial overlap between the issues raised in the Petition, on one hand, and in the 2Wire Lawsuit and Texas Litigation, on the other hand. TQ Delta has asserted claims 8, 10, 24, and 26 against CommScope in the Texas Litigation and claims 8 and 10 in the 2Wire Lawsuit. Claims 24 and 26 recite subject matter similar to that of claims 8 and 10, respectively. *See Ex. 1001*

at 20. The Challenged Claims include asserted claims 8, 10, 24, and 26 and just four non-asserted claims – claims 9 and 15 (which depend from claim 8) and claims 25 and 31 (which depend from claim 24). Thus, there is substantial claim overlap. *Apcon, Inc. v. Gigamon Inc.*, IPR2020-01583, Paper 9 at 14 (P.T.A.B. Mar. 16, 2021) (in finding factor 4 favors denial, noting that the additional claims challenged in petition depend from claim challenged in district court case); *Samsung*, IPR2020-01551, Paper 12 at 18-19 (“Petitioner does not show that the non-overlapping claims differ significantly in some way. . . . Rather, both sets of claims recite similar subject matter. . . . So, although the non-overlapping claims are challenged here, those claims are sufficiently similar to those at issue in the parallel proceeding.”).

Furthermore, the Petition relies on the same prior art and substantially the same invalidity arguments (anticipated by G.992.1, obvious over SC-060 as the primary reference, obvious over G.992.1 in view of SC-060, and obvious over G.992.1 in view of Wunsch) that CommScope relies on in the Texas Litigation. *See* Ex. 2023 (Invalidity Contentions) at 86-87 and Exhs. L-7-L-12. Similarly, in the 2Wire Lawsuit, 2Wire contends that the claims of the 835 Patent are anticipated by G.992.1 and are obvious over G.992.1 in view of SC-060.¹⁰ Ex. 2025 at 6-10. Therefore, Factor No. 4 favors denial. *See PEAG LLC v. VARTA Microbattery*

¹⁰ Moreover, as discussed in Section VI.D below, Wunsch is cumulative of SC-060.

GmbH, IPR2020-01213, Paper 9 at 18 (P.T.A.B. Jan. 6, 2021) (“[S]ubstantially identical prior art and invalidity grounds are asserted in both the district court and the *inter partes* review proceedings. . . . Accordingly, the fourth *Fintiv* factor weighs in favor of exercising discretion to deny institution.”).

Regarding Factor No. 5, CommScope is the petitioner here, a defendant in the Texas Litigation, and the corporate parent of the defendant in the 2Wire Lawsuit. Thus, Factor No. 5 favors denial. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18-19 (P.T.A.B. Dec. 1, 2020).

Lastly, Factor No. 6 – other circumstances that impact the Board’s exercise of discretion – favors denial. As discussed herein, the merits of Petitioner’s unpatentability assertions are weak, and CommScope’s Petition is barred under 35 U.S.C. § 315(b).

Accordingly, the Board should exercise its discretion to deny institution.

VI. NO REVIEW SHOULD BE INSTITUTED WITH RESPECT TO THE GROUNDS RAISED BY PETITIONER

As explained in detail below, the Petition fails to establish a reasonable likelihood that the Challenged Claims are unpatentable. The Petition proposes four grounds against the 835 Patent:

- **Ground 1.** Anticipation of claims 8-10, 15, 24-26, and 31 under 35 U.S.C. § 102(b) by G.992.1 ITU-T Recommendation (“G.992.1”).
- **Ground 2.** Unpatentability of claims 8-10, 15, 24-26, and 31 under 35

U.S.C. § 103 (a) over SC-060 ITU-T SG15/Q4 Contribution (“SC-060”).

- **Ground 3.** Unpatentability of claims 8-10, 15, 24-26, and 31 under 35

U.S.C. § 103 (a) over G.992.1 in view of SC-060.

- **Ground 4.** Unpatentability of claims 8-10, 15, 24-26, and 31 under 35

U.S.C. § 103 (a) over G.992.1 in view of U.S. Pub. No. 2002/0172188 (“Wunsch”).

As discussed in more detail below, the cited references do not, individually or collectively, disclose, teach, or suggest all of the elements of the Challenged Claims. Where none of the references discloses an element of the claims, *inter partes* review for obviousness cannot be instituted. *See CustomPlay, LLC v. ClearPlay, Inc.*, IPR2013-00484, Paper 29 at 12-13 (P.T.A.B. 2014) (claims not unpatentable where none of the asserted prior art references disclosed a claim element).

Additionally, as explained below for Grounds 2-4, the Petition fails to provide a sufficient reason why a person of skill in the art would have modified or combined the references as proposed or demonstrate a reasonable expectation of success in doing so. “An obviousness analysis requires more than simply showing that each limitation is found in the prior art.” *Jacobs Corp. v. Genesis III, Inc.*, IPR2014-01267, Paper 12 at 8 (P.T.A.B. 2015). “Petitioner must also show ‘whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.’” *Id.* “Petitioner must set forth sufficient articulated reasoning with rational underpinning to support its proposed obviousness ground.” *SAS*

Institute, Inc. v. Complementsoft, LLC, IPR2013-00581, Paper 15 at 12 (P.T.A.B. 2013). The Petition “has failed to address this latter, ‘reason to combine’ portion of the obviousness analysis.” *Jacobs*, IPR2014-01267, Paper 12 at 8; *see also Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016) (holding that “[t]he reasonable expectation of success requirement refers to the likelihood of success in combining references to meet the limitations of the claimed invention” and “one must have a motivation to combine accompanied by a reasonable expectation of achieving what is claimed in the patent-at-issue.”).

For the foregoing reasons and as further discussed below, the Petition does not establish a reasonable likelihood that the Challenged Claims are unpatentable, and the Board should therefore not institute an *inter partes* review.

A. Ground 1: Anticipation of the Challenged Claims By G.992.1

The Petition does not show that there is a reasonable likelihood that the Petitioner would prevail on Ground 1 with respect to any of the Challenged Claims. In particular, G.992.1 does not anticipate any claim because it does not disclose the following elements of independent claims 8 and 24: “transmit a flag signal,” “switch to using for transmission[/reception], a second FIP setting following transmission[/ reception] of the flag signal,” “wherein: . . . the switching occurs on a pre-defined forward error correction codeword boundary following the flag signal” (collectively, the “Flag Signal Limitations”).

The G.992.1 DRA_Swap_Request message is not a “flag signal” as correctly construed to mean a “signal used to indicate when an updated FIP setting is to be used, where the signal does not include information (*e.g.*, a FEC codeword counter value) specifying when the updated FIP setting is to be used.” The DRA_Swap_Request message is also not a “flag signal” even if Petitioner’s construction (*i.e.*, a “signal used to indicate when an updated FIP setting is to be used (the signal does not include the FEC codeword counter value upon which the updated FIP setting is to be used)”) is applied. Because the DRA_Swap_Request is not a flag signal, G.992.1 does not disclose any of the Flag Signal Limitations.

1. The DRA_Swap_Request message is not a flag signal under Petitioners proposed construction because it does not “indicate when an updated FIP setting *is to be* used.”

Both parties’ proposed constructions include the positive requirement that the flag signal “indicate when an updated FIP setting *is to be* used.” The DRA_Swap_Request message does not meet this positive requirement because it is, as its name confirms, only a *request* to switch to an updated FIP setting, which request can be rejected. Ex. 2037 at ¶40; Ex. 1004 at p. 237 (specifying that DRA_Swap_Reply, which is sent in response to the DRA_Swap_Request may “NACK_SWAP” to reject the DRA_Swap_Request). Petitioner’s expert, Dr. Jacobsen, previously admitted this. Ex. 2033 (Jacobsen Dep. Tr.) at 698:19-24 (“Q. . . . So the DRA swap request message – and we can refer back to Appendix 2 [of

the G.992.1 standard] for this if you need help on this, but the DRA swap request message can be expressly rejected by the CPE, correct? A. That looks right.”). At best, the DRA_Swap_Request only includes data specifying when an updated FIP setting *might or might not* be used. In distinction, the claimed flag signal “indicates when the update FIP setting *is to be* used.” Indeed, the claimed and disclosed invention of the 835 Patent requires that the updated FIP setting must be used for transmission following the flag signal (Ex. 2037 at ¶39) and, the claimed transceiver must, “switch to using for transmission[/ reception], a second FIP setting following transmission[/ reception] of the flag signal,” “wherein: . . . the switching occurs on a pre-defined forward error correction codeword boundary following the flag signal.” Ex. 1001 at claims 8 and 24; *see also id.* at 12:8-11.

“Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention *arranged as in the claim.*” *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983). The G.992.1 standard does not anticipate because the alleged flag signal, the DRA_Swap_Request message, may be rejected, meaning that it cannot indicate when an updated FIP setting “*is to be* used.” For this reason, G.992.1 does not disclose the Flag Signal Limitations.

- 2. The DRA_Swap_Request message is not a flag signal under Petitioner’s proposed construction because it “include[s] the FEC codeword counter value upon which the updated FIP setting [may or may not] be used.”**

Additionally, even if the improperly broad negative portion of the Petitioner’s

construction of “flag signal” is applied, the G.992.1 DRA_Swap_Request message is not a flag signal because it “include[s] the FEC codeword counter value upon which the updated FIP setting [may or may not] be used.” Petitioner contends that “[a] superframe reference number (SFR) included in the DRA_Swap_Request message identifies ‘around which superframe boundary the rate swap will occur.’”¹¹ Pet. at 20. Petitioner asserts that under its proposed construction only a “flag signal” that includes a FEC codeword counter is excluded and, because the SFR purportedly is not a FEC codeword counter value, the DRA_Swap_Request is not excluded by the negative portion of the construction. This assertion is incorrect, however, because the SFR is necessarily an FEC codeword counter value given the manner in which Petitioner and its expert apply G.992.1 in order to allege that the “switching occurs on a pre-defined forward error correction codeword boundary following the flag signal.”

For the limitation “switching occurs on a pre-defined forward error correction codeword boundary,” Petitioner relies on G.992.1’s disclosure that, “[i]f the modems operate with the mandatory S-values, these SFR-references always coincide with codeword boundaries.” Pet. at 24. A G.992.1 modem will not always operate with mandatory S-values. Ex. 1004 at 233 (“However if a different S-value is used then

¹¹ This assertion is wrong because the SFR only specifies around which superframe boundary the rate swap *may or may not* occur.

a reset is mandatory.”). But, Petitioner is necessarily relying on operation with mandatory S-values because only then will the SFR¹² numbered superframe correspond to an integer number of codewords so that the boundary of the SFR numbered superframe will correspond to a codeword boundary. Ex. 2037 at ¶42. However, because of this relationship where an SFR counter value corresponds to an integer number of codewords, the SFR counter value included in the DRA_Swap_Request *is* a codeword counter value. Ex. 2037 at ¶42.

For example, where the S-value is 1 (one of the mandatory values), each superframe will include 68 codewords and, if the SFR value in the DRA_Swap_Request message is 3, this corresponds to a codeword counter value of $(68 \times 4)/1 = 272$. Ex. 2037 at ¶42. This was previously confirmed by Dr. Jacobsen. *See* Ex. 2034 (*TQ Delta v. ZyXEL*, Jacobsen Dep. Tr.) at 64:1-25 (“Q Yes. And your switch would occur on the code word following the 68 times fourth code word, is that correct, for an SFR of 3? A Yes.”); *see also id.* 65:22-24 (“THE WITNESS: With an S-value of 1, that would be the number of FEC code words you would have transmitted.”). Dr. Jacobsen admitted that the SFR value corresponds to a particular FEC codeword counter value. *Id.* at 74:5-7 (“A The SFR value is a superframe

¹² SFR values are restricted to “SFR = $4 \times N - 1$ where N is an integer number,” i.e., 3, 7, 11, 15, etc. Ex. 1004 at 233. An SFR of 3 is the fourth superframe, an SFR of 7 is the eighth superframe, *etc.*, because the count starts at zero. *See id.* (“Notice that SFR equals zero at the first ShowTime symbol and is then increased by one (modulo 256) at each consecutive superframe.”).

counter value. Its values are limited to ensure that whichever one you pick, it coincides with an FEC code word boundary.”), at 75:11-14 (“A Again, the SFR values are restricted to ensure that whichever one you pick, as long as your value of S is one of the mandatory values, that switch will be on an FEC code word boundary”), and at 76:5-12 (“A There is a superframe of a particular size. There are mandatory values of S that span those superframes of a particular size. So there is a relationship between how many symbols are spanned by a FEC code word, how many of those there are in each superframe, and how many superframes you have to let elapse between when the -- when the FEC code word boundary coincides with the superframe boundary.”). Because the SFR included in the DRA_Swap_Request message is an FEC codeword counter, this is an additional reason why the DRA_Swap_Request message is not a flag signal and G.992.1 does not disclose the Flag Signal Limitations.

3. The DRA_Swap_Request message is not a flag signal as properly construed.

For the reasons explained in Section III, *supra*, the correct construction of “flag signal” is “signal used to indicate when an updated FIP setting is to be used, where the signal does not include information (e.g., a FEC codeword counter value) specifying when the updated FIP setting is to be used.” As explained above, Petitioner asserts that the SFR value included in the DRA_Swap_Request indicates when an updated FIP setting is to be used. This assertion is necessarily an admission

that the DRA_Swap_Request includes information specifying when the updated FIP setting is to be used. Thus, DRA_Swap_Request is not a “flag signal” and G.992.1 does not disclose any of the Flag Signal Limitations.

B. Ground 2: Obviousness of the Challenged Claims Over SC-060

For the reasons below, Petitioner has not shown that any Challenged Claim is likely unpatentable for obviousness over SC-060.

1. SC-060 does not disclose adapting FIP settings.

As an initial matter, Petitioner concedes that “SC-060 does not expressly list any FIP settings, such as K, R, N, or D, as PMS-TC parameters ‘that may be modified as a result of an OLR.’” Pet. at 30. Rather, SC-060 describes an On-line Reconfiguration (OLR) protocol that reconfigures “(b_i, g_i) – Bits and fine gains,” “L_p – number of bits in the p-th latency path and B_{pn} - number of octets . . .” and “Net_actual – the actual upstream or downstream net data rate.” Ex. 1005 at 1-2. Thus, SC-060 does not disclose at least:

- “[a]n apparatus configurable to adapt forward error correction and interleaver parameter (FIP) settings” or “switch to using for transmission[/ reception], a second FIP setting following transmission[/ reception] of the flag signal” (independent claims 8 and 24);
- “a first forward error correction parameter value of the first FIP setting is different than a second forward error correction parameter value of the second FIP

setting,” (dependent claims 9 and 25); and

- “a first interleaver parameter value of the first FIP setting is different than a second interleaver parameter value of the second FIP setting,” (dependent claims 10 and 26).

2. SC-060 does not disclose the Flag Signal Limitations.

SC-060 describes an OLR Request message that is “used by an ATU to request a specific on-line reconfiguration.” Ex. 1005 at 2. The ATU receiving the request transmits an OLR acknowledgement “to positively acknowledge an OLR Request.” *Id.* The OLR acknowledgement is a Synch Flag. Petitioner contends that the “Synch Flag” disclosed in SC-060 is the “flag signal” of the Challenged Claims. *See* Pet. at 32-33. It is not.

The undisputed portion of the construction of flag signal is a “signal used to indicate *when an updated FIP setting is to be used.*” “FIP setting” was construed to mean “set including at least one forward error correction parameter value and at least one interleaver parameter value.” Because SC-060 does not disclose updating FIP settings, the SC-060 “Synch Flag” cannot be a “signal used to indicate when an updated FIP setting is to be used.” Accordingly, SC-060 does not disclose the Flag Signal Limitations.

3. SC-060 does not render the Challenged Claims obvious.

Recognizing that SC-060 does not disclose an apparatus configurable to adapt

FIP settings, Petitioner falls back to obviousness. Pet. at 29. However, the Petition fails to make a *prima facie* case of obviousness. “A party seeking to invalidate a patent on obviousness grounds must demonstrate . . . that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1347 (Fed. Cir. 2014) (citations omitted).

a. No Motivation to Modify SC-060

Petitioner asserts that “[a] POSITA would have been motivated to extend the SC-060 protocol to modify [FIP settings] because, as SC-060 discloses, it was known that lack of synchronization of transceivers implementing a reconfiguration could be ‘catastrophic.’” Pet. at 31 (citing Ex. 1005, §3.6). This assertion is entirely illogical. A motivation to synchronize transceivers, something that SC-060 is directed to, is not a motivation to alter the types of parameters that SC-060 is able to adapt. The lack of synchronization of transceivers implementing a reconfiguration is “catastrophic” not because the parameters being adapted are not FIP settings. Instead, SC-060 teaches that the lack of synchronization of transceivers implementing a reconfiguration may be catastrophic if “the ATU requesting the OLR either false detects or misses an OLR Acknowledgement[.]” Ex. 1005, §3.6. Per SC-060, this lack of synchronization is addressed by sending “an OLR

Acknowledgement (in the form of a Synch Flag),” (*see* Ex. 1005 at §3.6), **not** by “extend[ing] the SC-060 protocol to modify” FIP settings as Petitioner proposes. And the Petition does not explain why modifying SC-060 to adapt FIP settings, rather than the non-FIP settings that it does adapt, would remedy any lack of synchronization. Thus, the Petitioner has not articulated any valid reason why a POSITA would be motivated modify SC-060 to adapt FIP settings.

b. No *prima facie* showing of obviousness; no Reasonable Expectation of Success at Arriving at the Claimed Invention

The Petition fails to establish that a POSITA modifying SC-060 to adapt FIP settings would have had a reasonable expectation of success in “meet[ing] the limitations of the claimed invention.” *Intelligent Bio-Sys., Inc.*, 821 F.3d at 1367 (holding that “[t]he reasonable expectation of success requirement refers to the likelihood of success in combining references to meet the limitations of the claimed invention” and “one must have a motivation to combine accompanied by a reasonable expectation of achieving what is claimed in the patent-at-issue.”).

It is undisputed that in SC-060, the reconfiguration occurs “on the first DMT symbol of the Superframe with count equal to $(SFlgSf + 1 + SfDly)$ modulo 256,” not an FEC codeword boundary. Ex. 1005 at p. 5. Petitioner does not assert that a DMT symbol boundary is the same as an FEC codeword boundary. This disconnect is the natural result of SC-060 having nothing to do with the adaption of FEC

codeword or interleaver parameters. Thus, SC-060 does not teach that “the switching occurs on a pre-defined forward error correction codeword boundary.”

Given this lack of disclosure, the Petition refers to Dr. Jacobsen's assertion that “it would be necessary for the first PMD symbol of the PMD superframe count equal to $(SFlgSf + 1 + SfDly)$ modulo 256 to coincide with an FEC codeword boundary in order to avoid a reset of the FEC mechanism, as G.992.1 discloses.” Pet. at 36 (citing Ex. 1003 at ¶384). However, Dr. Jacobsen does not articulate how configuration parameters would be selected “so that the first PMD symbol of the PMD superframe count equal to $(SFlgSf + 1 + SfDly)$ modulo 256 to coincide with an FEC codeword boundary.” Thus, the Petition fails to establish that a POSITA would have a reasonable expectation of success in modifying SC-060 such that the “switching occurs at a forward error correction codeword boundary.” *Kinetic Techs., Inc. v. Skyworks Solutions, Inc.*, IPR2014-00529, Paper 8 at 15 (P.T.A.B. Sept. 23, 2014) (“The Declaration does not explain the ‘how,’ ‘what,’ and ‘why’ of the proposed combination of references. Dr. Mohapatra does not explain how the teachings of the specific references could be combined, which combination(s) of elements in specific references would yield a predictable result, or how any specific combination would operate or read on the asserted claims.”) (citing *ActiveVideo Networks, Inc. v. Verizon Commc'n, Inc.*, 694 F.3d 1312, 1327 (Fed. Cir. 2012)). Explaining how to select parameter values for $SFlgSf$ and $SfDly$ so that $(SFlgSf + 1$

+ Sfdly) modulo 256 to coincide with an FEC codeword boundary is particularly critical because SC-060 counsels against using its method to make modifications to FEC parameters. Ex. 1005 at 2 (warning that its disclosed method has “complex interactions within the ADSL system.”). Failure to articulate that and how there would be a reasonable expectation of success is, alone, fatal to Ground 2.

The Petition further asserts that “[t]o the extent that SC-060 does not disclose timing the reconfiguration such that it occurs on a FEC codeword boundary, it would have been obvious to a person having ordinary skill in the art in extending the SC-060 protocol to cover changes to FIP settings to restrict the scheduling parameters, SFlgSf and Sfdly, *to certain values* such that the switch to the new FIP setting would always occur on a pre-defined FEC codeword boundary.” Pet. at 36 (citing Ex. 1003 at ¶386). Dr. Jacobsen’s Declaration at ¶386 merely repeats the argument in the Petition. Dr. Jacobsen does not explain how it would have been obvious to a person having ordinary skill in the to restrict the scheduling parameters, SFlgSf and Sfdly, to certain values such that the switch to the new FIP setting would always occur on a pre-defined FEC codeword boundary. For example, SC-060 states that “Sfdly is a non-negative integer less than 4 and is approximately the number of PMD superframes that the receiver will have advance knowledge of an impending OLR reconfiguration before the new configuration must become effective.” Ex. 1005 at §3.4; *see also* Ex. 1003 at ¶183. Despite this complex disclosure of SC-060, Dr.

Jacobsen has not articulated why or how a POSITA would, or even could, make this modification. “Merely repeating an argument from the Petition in the declaration of a proposed expert does not give that argument enhanced probative value.” *Kinetic*, No. IPR2014-00529, Paper 8 at 15; *see also Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1340–41 (Fed. Cir. 2020).

Accordingly, the Petition fails to present a *prima facie* case that it would have been obvious to modify SC-060 so that “the switching occurs on a pre-defined forward error correction codeword boundary.”

C. Ground 3: Obviousness of the Challenged Claims Over G.992.1 and SC-060

For the reasons below, Petitioner has not shown that any Challenged Claim is likely unpatentable for obviousness over G.992.1 and SC-060.

1. Neither G.992.1 nor SC-060 disclose the Flag Signal Limitations.

Petitioner has not made a *prima facie* showing that any of the Challenged Claims are likely unpatentable over the combination of G.992.1 and SC-060. As explained above, neither G.992.1 nor SC-060 disclose the Flag Signal Limitations and SC-060 does not disclose adapting FIP settings. Ground 3 also fails to demonstrate a reasonable expectation of success at arriving at the claimed inventions or *prima facie* obviousness of a combination that includes the “switching occurs on a pre-defined forward error correction boundary following the flag signal” limitation

of the Challenged Claims.

2. No *prima facie* showing of obviousness; no reasonable expectation of success at arriving at the claimed inventions.

The Petition is deficient because it fails to establish that a POSITA modifying G.992.1 with SC-060 would have had a reasonable expectation of success in “meet[ing] the limitations of the claimed invention.” *Intelligent Bio-Sys., Inc.*, 821 F.3d at 1367 (Fed. Cir. 2016). For “the switching occurs on a pre-defined forward error correction codeword boundary following the flag signal” limitation, the Petition asserts “[a] POSITA would also restrict the values of SFlgSf and SfDly to ensure that the switch to the reconfigured settings always occurs on a FEC codeword boundary to avoid a FEC reset.” Pet. at 46 (citing Ex. 1003, ¶471). However, Dr. Jacobsen’s declaration at ¶471 merely repeats this argument without any explanation or reasoning. Ex. 1003 at ¶471 (“A person having ordinary skill in the art would also have restricted the values of SFlgSf and SfDly to ensure that the switch to the reconfigured settings always occurs on an FEC codeword boundary to avoid a reset of the FEC mechanism, as disclosed by G.992.1.”). “Merely repeating an argument from the Petition in the declaration of a proposed expert does not give that argument enhanced probative value.” *Kinetic Techs.*, IPR2014-00529, Paper 8 at 15; *see also Facebook*, 973 F.3d at 1340–41.

In SC-060, the reconfiguration occurs “on the first DMT symbol of the Superframe with count equal to $(SFlgSf + 1 + SfDly) \text{ modulo } 256$.” Ex. 1005 at p.

5. The Petition does not assert or show that a DMT symbol boundary is the same as a FEC codeword boundary. Thus, the substitution of SC-060's reconfiguration scheme for that of G.992.1, as the Petition proposes, does not include "the switching occurs on a pre-defined forward error correction codeword boundary." Further, despite the complex disclosure of SC-060 and the G.992.1 DRA procedure, Dr. Jacobsen does not articulate how configuration parameters, SFlgSf and SfDly, should be selected so that the switching occurs on a FEC codeword boundary, or if such a selection is even possible. Explaining how to select parameter values for SFlgSf and SfDly so that $(SFlgSf + 1 + SfDly) \text{ modulo } 256$ coincides with an FEC codeword boundary is particularly critical because SC-060 counsels against using its method to make modifications to FEC parameters because SC-060 recognizes that its disclosed method has "complex interactions within the ADSL system." Ex. 1003 at p. 2. Additionally, SC-060 states that "SfDly is a non-negative integer less than 4 and is approximately the number of PMD superframes that the receiver will have advance knowledge of an impending OLR reconfiguration before the new configuration must become effective." Ex. 1005 at §3.4. Dr. Jacobsen has not explained how this critical restriction on SC-060 could be met while simultaneously attempting to arrive at the claimed invention.

Thus, the Petition and Dr. Jacobsen have failed to establish that POSITA would have a reasonable expectation of success in modifying G.992.1 with SC-060

such that the “switching occurs on a forward error correction codeword boundary following the flag signal.” *Kinetic Techs.*, No. IPR2014-00529, Paper 8 at 15. Accordingly, the Petition fails to present a *prima facie* case of obvious over G.992.1 and SC-060.

D. Ground 4: Obviousness of the Challenged Claims Over G.992.1 and Wunsch

The disclosure of Wunsch is materially the same as SC-060. Further, as explained below, Wunsch is used to modify G.992.1 in the same way SC-060 is used to modify G.992.1 in Ground 3.

In Ground 3, the Petition contends that a POSITA would “modify the DRA protocol of G.992.1 by replacing the SFR in the DRA_Swap_Request message of the G.992.1 DRA protocol with the SFlgSF and SfDly.” Pet. at 45. Similarly, in Ground 4, the Petition contends a POSITA would “modify the DRA protocol of G.992.1 by replacing the SFR parameter of the DRA_Swap_Request message with SFlgSf and Dly parameters of Wunsch.” Pet. at 54.

With reference to the claimed “flag signal,” in Ground 3, the Petition contends that the Synch Flag disclosed in SC-060 is the claimed flag signal (*see* Pet. at p. 45 (identifying synch flag as the flag signal)) and in Ground 4, the Petition contends that synch flag disclosed in Wunsch is the claimed flag signal. (*see* Pet. at p. 54 (identifying synch flag as the flag signal)). There are no material differences between the SC-060 Synch Flag and Wunsch’s Synch Flag and each is used in the

same manner in each respective Ground.

With reference to the “switch to using for transmission . . . following transmission of the flag signal,” in Ground 3, the Petition alleges that “the ATU-R would switch to using the new FIP settings for upstream transmission after counting $(SFlgSf + 1 + SfDly)$ modulo 256 after sending the Synch Flag.” Pet. at p. 45. Similarly, in Ground 4, the Petition alleges that “the ATU-R would switch to using the new FIP settings for upstream transmission after counting $(SFlgSf + 1 + Dly)$ modulo 256 after sending the Synch Flag.” Pet. at p. 54.

Accordingly, because Ground 4 is materially the same as Ground 3, TQ Delta's arguments with respect Ground 3 apply equally to Ground 4 as summarized below. Additionally, as explained below, the Petition and the Declaration of Dr. Jacobsen do not present a coherent discussion of the bases for Ground 4 and, for this additional reason, Ground 4 does not demonstrate that the Challenged Claims are likely unpatentable.

1. Neither G.992.1 nor Wunsch disclose the Flag Signal Limitations.

For the reasons set forth in Section VI.C.1, the combination of G.992.1 and Wunsch does not disclose a “flag signal,” because like the SC-060 Synch Flag, the Synch Flag disclosed in Wunsch is not “used to indicate when an updated FIP setting is to be used.” Accordingly, even if a POSITA would have modified G.992.1 with Wunsch, the modified G.992.1 would not have rendered the “flag signal” limitation

obvious.

2. No *prima facie* showing of obviousness; no reasonable expectation of success at arriving at the claimed inventions.

Like in Ground 3, the Petition asserts that “as taught by G.992.1, a POSITA would also restrict the values of SFlgSF and Dly to ensure that the switch to the reconfigured settings always occurs on a FEC codeword boundary to avoid a FEC reset.” Pet. at 55. However, neither the Petition nor Dr. Jacobsen articulates how a POSITA would, or even could, have used the teachings of G.992.1 to “restrict the values of SFlgSF and Dly.”

3. Ground 4 is incoherent.

The Board should deny institution based on Ground 4 at least because the Petition advances inconsistent arguments with respect to the “switch to using for transmission, a second FIP setting following transmission of the flag signal.” Specifically, in support of its motivation to combine, the Petition contends that where G.992.1 is modified by Wunsch, the “ATU-C and ATU-R would switch to the new parameter values at the time specified by the Dly value.” Pet. at 53. Elsewhere, the Petition asserts that “the ATU-R would switch to using the new FIP settings for transmission after counting (SFlgSf+1 + Dly) modulo 256 after sending the Synch Flag.” The inconsistency between the positions advanced by Petitioner with reference to this element make it impossible to discern how Petitioner is proposing that a POSITA would purportedly modify G.922.1 with Wunsch to arrive

at the Challenged Claims.

VII. CONCLUSION

For at least the foregoing reasons, TQ Delta respectfully requests that the Board refuse to institute an *inter partes* review.

Dated: May 25, 2022

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CERTIFICATE OF SERVICE

I hereby certify that the Patent Owner Preliminary Response to Petition for *Inter Partes* Review Pursuant to 35 U.S.C. §§ 42.107 in connection with *Inter Partes* Review Case IPR2022-00352 was served on this 25th day of May, 2022 by electronic mail to the following:

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), the undersigned attorney for the Patent Owner, TQ Delta, LLC, declares that this Patent Owner Preliminary Response has a total of 13,995 words, according to Microsoft Word® word count tool, excluding the parts of the Response exempted by 37 C.F.R. § 42.24(a)(1).

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